A Note on 'History of Uncertainty & Unanswered Questions'

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Uncertainty is a challenge, perhaps the ultimate academic challenge. Its history goes back to the beginning of our thinking, talking, and writing about truth and our knowledge condition. Giambattista Vico's three ages - of gods, of heroes, and of men - is a history of where we have sought truth and found uncertainty. Now we are in the 'age of men' who presume to know truth and certainty without gods or heroes.

Mostly we positivists take uncertainty to be a matter of 'ignorance', the absence of truth or objective knowledge of reality. Ignorance is an absence of the knowable. Instead of the binary opposition of ignorance against knowing, some presume knowledge to be a matter of degree, a scale of knowing from nil to vague to actionable - perhaps without ever attaining certainty or, as Vico put it, 'entering the Mind of God'.

Discovering how ignorance interferes with attaining our purposes impels us to create knowledge, systematically countering obstructing uncertainties, learning via scientific or intuitive methods - the latter sometimes yielding 'tacit' actionable knowledge that awaits final verification or dismissal. Science labors, knowledge progresses, and uncertainty recedes.

The business school community is interested in science for its own sake, a nod to us as academics, but also because we presume improved knowledge yields economic benefit. Economists inquire into profit, the increase of wealth, not only into its allocation. Entrepreneurs pursue profit by creating or acquiring, and applying, knowledge - having a better understanding of the economic system, including profiting from others' ignorance, and by transforming knowledge into economic rent.

Given today's positivist tendencies, we distinguish 'discovery' and 'creation' modes of entrepreneurship. Discovery presupposes some individuals have a 'trait', perhaps psychological, an 'awareness' of reality that enables them to seize pre-existing uncertainties as 'opportunities' and engage them more profitably than do individuals of lesser ability.

Others advance an 'opportunities creation' view. This implies a more fluid process as the entrepreneur engages the environment, 'enacting' the specific opportunity through hir practice and learning. This trait is less superior seeing and transforming that knowledge into profit than superior 'learning' which leads to securing rents from the new knowledge created.

Both modes presume a knowable reality, one of positivism's principal axioms. The second mode calls for specifying rather than presuming a realist theory of learning, of expanding our knowledge of the real, and of discriminating progress from regress. Learning is not mere change in knowing, nor is knowledge relative.

Modifications to Naïve Positivism

Rather than presuming reality is homogeneous, seamless, or continuous, so graspable using conventional mathematics (see Parker), we might presume reality is structured in some other way.

Along these lines Courtney (2003) suggests four 'scenarios' of limited knowledge; three immediately actionable (a) homogenous - extensive, (b) heterogeneous - multiple mutually exclusive paradigms, (c) homogenous - limited, plus another (d) non-actionable until further learning.

Presupposing a knowable reality, positivist approaches tend to frame uncertainty as a 'mental state', an inability to reconcile the real with the known. Being 'in uncertainty' inhibits reasoned action. Entrepreneurial traits may overcome this state and lead to profitable activity.

Beyond Positivist Views

We speak of organizations 'knowing', hence of their being uncertain. Any discussion of uncertainty presents an epistemology implying a specific 'knowledge-model of the actor' - human or institutional. An epistemology - the study of knowledge - addresses uncertainty. Presuming reality is knowable leads towards 'realist' epistemologies.

There are other epistemologies, many 'pre-modern' - pre- our scientific age. But the deepening criticism of economics as a computable science of the human condition is helping to resuscitate some of these. Many heterodox economists argue modernist methods are inhibiting rather than facilitating progress towards a better understanding. Coase was especially vocal on this, arguing economics 'must change'.

This is tantamount to addressing changed notions of uncertainty. The treatments of uncertainty by JM Keynes and Frank Knight are of special interest to English language economists. Broadly speaking these re-situate 'uncertainty' between the human agent's experiencing and knowing, eschewing all presumptions about a non-human objective reality and its know-ability. The focus is on the human agent's practice, on generating 'subjective' confidence sufficient to act economically - not about meeting some 'objective' threshold. Keynes paid special attention to probability and 'induction'. Knight's views are trickier though 'Knightian uncertainty' is more widely noted.

Simon is an important guide to Knightian uncertainty. He wrote: "nothing is more important in setting our research agenda and informing our research methods than our view of the nature of the human beings whose behavior we are studying" (APSR 1985:303). This includes assumptions about the actor's epistemology - indeed an epistemology is a model of the actor. In such knowledge respects we are how we respond to uncertainty. Knowledge would be meaningless if we were omniscient. Knight observed that economics springs from our not-knowing, our uncertainties.

Economists axiomatize the human capacity to reason logically. Simon argued this is 'bounded', so that even when we presume reality exists, is logically constructed, and so can be explored mathematically, other types of uncertainty - not just ignorance - come into play, especially those arising from 'subjective' bounds to our understanding. Despite claiming to be a positivist Simon hesitated to assume reality was knowable. His views may be idiosyncratic responses to Knight's as he met them at Chicago.

Early on, in *Administrative Behavior*, Simon located 'organizational certainty' in the views (and values) of the organization's management or 'controlling group'. Power makes right. Simon saw organization as a socio-economic apparatus to resolve operatives' uncertainty about managerially-set goals. Here 'uncertainty' is not, as positivists assume, ignorance about the real that science's advance might resolve. Rather it is local, contingent, and behavioral, resolved by building and managing an 'organization'. In organizations uncertainty lies between the operative's activity and the organizational goals that management determine. Put differently, Simon argued 'organization' might be management's technique to accommodate our inability to be fully rational. The resulting organizations might well be 'unnatural' socio-economic entities but could be fully rational and so help resolve our (and our community's) uncertainties.

Taking Knightian Uncertainty Seriously

Given today's positivist hegemony, Simon's 'bounded rationality' leads many to read 'Knightian uncertainty' as a product of those human shortcomings that lead to our ignorance. But leveraging off the realists' presumed certainty muddies Knight's arguments about the connection between risk, uncertainty, and profit, seemingly narrowed onto profiting only from others' ignorance. Imagination, judgment, and ethics are cut from the analysis.

Knight presumed human circumstances were dynamic and unpredictable, and so uncertain. Indeed, he thought there would be neither economy nor economics if this was not so. Uncertainty is the basic metaphor for Knight's sense of the human condition, much as bounded rationality is for Simon. Ultimately, as Knight explored in "*What is Truth in Economics?*" (1940) and elsewhere, our economic choices are matters of ethical practice.

Economics is the study of the social arrangements 'under uncertainty' that maximize our welfare. Economic knowing is both individual and social. This collapses any distinction between practical economics (in the real world we inhabit) and ethics. Notwithstanding, Knight hoped for a rigorous economics that could illuminate our lives, a 'serious subject' rather than an abstraction or diversion for mathematicians and others. He believed in an economics that could alleviate the real-world problems our uncertainties cause.

Simon was more focused on managing than was Knight, who was not greatly interested in organizations. Coase, who attended some of Knight's lectures in 1932, and was much influenced by his thinking later as his colleague at Chicago, was more direct, especially in "*The Nature of the Firm*" (1937). Like Simon, Coase did not frame the entrepreneur in a positivist way, as a rational self-maximizing agent confronting a somewhat uncertain 'opportunity containing' market. He was more interested in inter-agent relations, seeing entrepreneurs as generators of novel collaborations that would engage and alleviate their uncertainties - the results being novel economic value.

These writers' analyses seem 'orthogonal' to the positivist one that presumes uncertainties arise only between Man and Reality. Even though our scientific interrogation of Mother Nature is forever incomplete, and ignorance abounds, Knight saw other types of uncertainty arising between agents who are not omniscient, who are bounded and so heterogeneous in their knowledge and interests. Economic advantage may spring more readily from resolving these heterogeneities (leadership under uncertainty) than from expanding our grasp of Mother Nature's nature (the innovation story).

It follows that in addition to ignorance, an inevitable aspect of the human condition, we experience 'indeterminacy', the root metaphor of game theory between agents with divergent knowledge and interests (as in principal-agent theory). In practice game theory has limited application to real economic activity - for in circumstances that are rigorously analyzable, there is no opportunity for profit, especially crucial when transaction costs are non-zero.

Since we are not able to grasp the world in its entirety and cannot experience it as a coherent market, we also confront uncertainties of ‘incommensurability’ - that the knowledge we bring to any situation is bounded and thus of many kinds. We have no rigorous way to bring it all together - beyond simplifying by excluding all but a single mode of knowing and invoking *ceteris paribus*. This opens us to the charge of ‘dogmatism’ or ‘non-falsifiability’, denying uncertainty.

Knight, Keynes, and Coase, among many others, resisted the impulse to simply, abstract, and thereby excise all modes of uncertainty other than ignorance - ‘throwing the baby out with the bathwater’. While all were sensitive to the limitations of language Knight was the more explicit about the additional modes of uncertainty lying between our experiences and the language we construct to capture them. As soon as we back away from presuming truth is that which can be rigorously expressed (modeled) in ‘formal’ language, as many positivists do, ‘natural’ language enters the analysis. Economics converges with history as well as ethics.

Today’s post-2008 crash criticism of neoliberal economics converges with an epistemological push-back against naïve positivism. Our inventory of uncertainties is extended beyond mere ignorance. We add the indeterminacy and incommensurability of our social life, and ‘irrelevance’, the uncertainty of capturing our situation in actionable language. The indeterminacy, incommensurability, and irrelevance uncertainties reflect our social nature as well as our capacity for judgment. They move the analysis into the subjective universe of ‘unanswered questions’ lying beyond the limits Hayek pilloried as ‘scientism’. There may lie some answers to key questions about why firms exist, why managers matter, and how entrepreneurship works (Michael).